इंटरनेट मानक

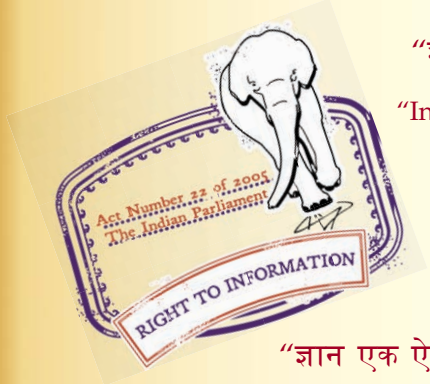
Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 11008 (1984): Methabenzthiazuron Water Dispersible Powder Concentrates [FAD 1: Pesticides and Pesticides Residue Analysis]



"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

IS : 11008 - 1984

Indian Standard

SPECIFICATION FOR METHABENZTHIAZURON WATER DISPERSIBLE POWDER CONCENTRATES

UDC 632·954 METHABENZTHIAZURON

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 3

November 1984

Indian Standard

SPECIFICATION FOR METHABENZTHIAZURON WATER DISPERSIBLE POWDER CONCENTRATES

Pest Control Sectional Committee, AFCDC 6

Chairman	*Representing*
DR K. D. PAHARIA	Directorate of Plant Protection, Quarantine & Storage (Ministry of Agriculture), Faridabad
Members	
DR P. K. AGGARWAL	IDMA Laboratories, Chandigarh
DR S. R. IYENGAR (*Alternate*)	
DR H. L. BAMI	Pesticides Residue Analysis Sectional Committee, AFDC 56, ISI
DR B. BANERJEE	Tea Research Association, Jorhat
DR G. SATYANARAYANA (*Alternate* I)	
SHRI S. C. DAS (*Alternate* II)	
SHRI N. S. BIRDIE	Shriram Test House, Delhi
SHRI R. K. BANERJEE (*Alternate*)	
CHIEF PLANT PROTECTION OFFICER	Department of Agriculture, Government of Maharashtra, Bombay
CHEMIST INCHARGE, INSECTICIDES TESTING LABORATORY (*Alternate*)	
DR M. S. DHATT	National Malaria Eradication Programme, Delhi
SHRI V. DORAIRAJ	Plastic Containers Sectional Committee, MCPD 11, ISI
SHRI G. D. GOKHALE	Bombay Chemicals Private Limited, Bombay
SHRI V. V. KETKAR (*Alternate*)	
SHRI N. L. KALRA	National Institute of Communicable Diseases, Delhi
SHRI G. C. JOSHI (*Alternate*)	
DR R. L. KALRA	Punjab Agricultural University, Ludhiana
DR R. P. CHAWLA (*Alternate*)	
DR KALYAN SINGH	Chander Sekhar Azad University of Agriculture & Technology, Kanpur
DR S. K. KASHYAP	National Institute of Occupational Health (ICMR), Ahmadabad
DR S. K. GUPTA (*Alternate*)	
SHRI S. G. KRISHNAN	National Organic Chemical Industries Limited, Bombay
DR J. S. VERMA (*Alternate*)	
SHRI J. K. KHOSLA	Metal Containers Sectional Committee, MCPD 12, ISI
SHRI A. N. BHATTACHARYYA (*Alternate*)	

(*Continued on page* 2)

(*Continued from page* 1)

Members	*Representing*
DR S. LAKSHMANAN	Paper and Flexible Packaging Sectional Committee (MCPD 14), ISI
DR J. C. MAJUMDAR	BASF India Limited, Bombay
DR B. P. CHANDRASEKHAR (*Alternate*)	
SHRI S. K. MAJUMDAR	Central Food Technological Research Institute (CSIR), Mysore
SHRI M. MUTHU (*Alternate*)	
SHRI K. S. MEHTA	Bharat Pulverising Mills Private Limited, Bombay
SHRI S. CHATTERJEE (*Alternate*)	
SHRI L. S. MIRLE	Agromore Limited, Bangalore
SHRI S. K. RAMAN (*Alternate*)	
SHRI J. M. MODI	Pesticides Formulators Association of India (S.S.I.), Bombay
DR S. R. BAROOAH (*Alternate*)	
DR S. K. MUKERJEE	Agricultural Chemicals Division, Indian Agricultural Research Institute (ICAR), New Delhi
DR N. K. ROY (*Alternate*)	
SHRI K. RAJENDRAN NAIR	Central Insecticides Cell, Directorate of Plant Protection, Quarantine & Storage (Ministry of Agriculture), Faridabad
DR R. C. GUPTA (*Alternate* I)	
SHRI S. K. GHOSH (*Alternate* II)	
SHRI P. V. NARAYANAN	Indian Institute of Packaging, Bombay
SHRI K. B. GUPTA (*Alternate*)	
DR V. N. NIGAM	Ministry of Defence (DGI)
SHRI M. M. PADALIA	Department of Agriculture, Government of Gujarat, Ahmadabad
SHRI R. G. JADEJA (*Alternate*)	
SHRI A. R. PANICKER	Hindustan Insecticides Limited, New Delhi
DR S. N. DESHMUKH (*Alternate*)	
SHRI Y. A. PRADHAN	Rallis India Limited, Bombay
SHRI M. L. SHAH (*Alternate*)	
DR R. L. RAJAK	Central Insecticide Laboratory, Directorate of Plant Protection, Quarantine & Storage (Ministry of Agriculture), Faridabad
SHRI V. C. BHARGAVA (*Alternate* I)	
DEPUTY DIRECTOR (CHEMICAL) (*Alternate* II)	
REPRESENTATIVE	Department of Agriculture, Government of Andhra Pradesh, Hyderabad
DR K. D. SHARMA	Directorate General of Technical Development, New Delhi
SHRI S. C. BAJAJ (*Alternate*)	
DR K. N. SHRIVASTAVA	Pesticides Association of India, New Delhi
DR J. C. MAJUMDAR (*Alternate*)	
DR K. N. SHRIVASTAVA	Shaw Wallace & Co Limited, Calcutta
SHRI R. N. ROYCHOWDHURY (*Alternate*)	
SHRI A. C. SHROFF	Excel Industries Limited, Bombay
SHRI P. V. KANGO (*Alternate*)	
DR K. SIVASANKARAN	Union Carbide (India) Limited, New Delhi
DR U. V. SINGH (*Alternate*)	

(*Continued on page* 10)

AMENDMENT NO. 1 JUNE 1988

TO

IS:11008-1984 SPECIFICATION FOR METHABENZTHIAZURON WATER DISPERSIBLE POWDER CONCENTRATES

(*Page 4, Table 1*) - Add the following Note at the end of the table:

'Note - The material shall not be subjected to accelerated storage treatment if it has crossed half of its shelf life as ascertained from its date of manufacture and date of expiry declared on the container.'

(AFCDC 6)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 2 JULY 1994
TO
IS 11008 : 1984 SPECIFICATION FOR METHABENZTHIAZURON WATER DISPERSIBLE POWDER CONCENTRATES

(*Page* 4, *Table* 1):

a) *Sl No.* (ii), *col* 2
b) *Sl No.* (iii), *col* 2 } — Delete the words 'after accelerated storage'.

(*Page* 6, *clause* **4.1**) — Substitute the following for the existing:

'When freshly manufactured material in bulk quantity is offered for inspection, representative samples of the material shall be drawn and tested as prescribed in IS 10627 : 1983 within 90 days of its manufacture. When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627 : 1983. However, the criteria for conformity of the material when tested, shall be the limits of tolerances, as applicable over the declared nominal value and given under clause **2.3.1** of the standard.'

(FAD 1)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR METHABENZTHIAZURON WATER DISPERSIBLE POWDER CONCENTRATES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 31 August 1984, after the draft finalized by the Pest Control Sectional Committee had been approved by the Agricultural and Food Products Division Council and the Chemical Division Council.

0.2 Methabenzthiazuron water dispersible powders are used for general weed control in wheat crop.

0.3 Methabenzthiazuron water dispersible powder formulations are generally manufactured to contain 70 percent (*m/m*) of methabenzthiazuron content.

0.4 In the preparation of this standard, due consideration has been given to the provisions of the *Insecticides Act*, 1968 and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under these, wherever applicable.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

---

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for methabenzthiazuron water dispersible powder concentrates.

*Rules for rounding off numerical values (*revised*).

2. REQUIREMENTS

2.1 Description — The material shall be in the form of a fine homogeneous powder together with filler(s) and adjuvant(s) and shall be white to off-white in colour and shall wet readily on mixing with water, providing a suspension suitable for use as a spray. The material shall be free from visible extraneous matter and hard aggregates.

2.2 Methabenzthiazuron, technical employed in the manufacture of this material shall conform to IS : 11007-1984*.

2.3 The material shall also comply with the requirements given in Table 1.

TABLE 1 REQUIREMENTS FOR METHABENZTHIAZURON WATER DISPERSIBLE POWDER CONCENTRATES

(*Clauses* 2.3 *and* 5.1)

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Appendix in this Standard	Cl No. of IS : 6940-1982*
(1)	(2)	(3)	(4)	(5)
i)	Methabenzthiazuron content, percent by mass	Nominal value as declared on the container (*see* **2.3.1**)	A	—
ii)	Sieving requirement, material passing through 75-micron IS Sieve†, after accelerated storage, percent by mass, *Min*	97	—	11.1
iii)	Suspensibility, after accelerated storage, percent by mass, *Min*	70	—	11.2
iv)	Acidity (as H_2SO_4), percent by mass, *Max*	0·5	—	11.3.2
	or			
	Alkalinity (as NaOH), percent by mass, *Max*	0·3	—	11.3.3

*Methods of test for pesticides and their formulations (*first revision*).

†*See* IS : 460 (Part 1)-1978 Specification for test sieves: Part 1 Wire cloth test sieve (*second revision*).

*Specification for methabenzthiazuron, technical.

2.3.1 *Methabenzthiazuron Content* — When determined by the method prescribed in Appendix A of IS : 11007-1984*, the observed methabenzthiazuron content, percent (*m/m*), of any of the samples shall not differ from the nominal value by more than the percent tolerance applied to the declared nominal value as given below:

Nominal Value, Percent	*Tolerance Limit, Percent*	
Up to 9	+ 10 — 5	of the nominal value
Above 9 and below 50	± 5	
50 and above	+ 5 — 3	

2.3.1.1 The actual value of the methabenzthiazuron content in the formulation shall be calculated to the second decimal place and then rounded off to first decimal place before applying the tolerances as given in **2.3.1**.

2.3.1.2 The average methabenzthiazuron content of all the samples taken shall not be less than the declared nominal value.

3. PACKING AND MARKING

3.1 Packing — The material shall be packed in clean and dry trilaminated pouches made of 50-60 g maplitho paper/(0·009 mm) aluminium foil and 150 gauge polyethylene. These laminated pouches shall then be further packed with polyethylene lined containers made of mild steel or tin plate.

Retail pack up to 500 g shall be packed in a polyethylene bag of not less than 0·062 mm thickness, its mouth heat-sealed and then packed in cardboard carton individually (*see* IS : 6604-1972†).

The containers shall also comply with general requirements as stipulated in 2 of IS : 8190 (Part 1)-1980‡.

3.3 Marking — The containers shall bear legibly and the following information and any other additional information as is necessary under the *Insecticides Act* and the Rules:

a) Name of the material;

b) Name of manufacturer;

c) Date of manufacture;

---

*Specification for methabenzthiazuron, technical.

†Code of packaging of solid pesticides (up to 500 g).

‡Requirements for packing of pesticides: Part 1 Solid pesticides (*first revision*).

e) Batch number;

f) Nominal methabenzthiazuron content, percent (*m/m*); and

g) The minimum cautionary notice as worded in the *Insecticides Act* and Rules.

3.3.1 The containers may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Mark) Act, and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

4. SAMPLING

4.1 Representative samples of the material shall be drawn as prescribed in IS : 10627-1983*.

5. TESTS

5.1 Tests shall be carried out by the methods as referred to in col 4 and 5 of Table 1.

5.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS : 1070-1977†) shall be employed in tests.

NOTE — ' Pure chemicals ' shall mean chemicals that do not contain impurities which affect the results of analaysis.

APPENDIX A

[*Table* 1, *Item* (i)]

DETERMINATION OF METHABENZTHIAZURON CONTENT

A-0. METHODS

A-0.1 Two methods namely, UV-Spectrophotometric method and alkaline hydrolysis method for the determination of methabenzthiazuron have been prescribed. However, UV-Spectrophotometric method will be the referee method in case of dispute.

*Methods for sampling of pesticidal formulations.

†Specification for water for general laboratory use (*second revision*).

A-1. UV SPECTROPHOTOMETRIC METHOD — Same as given in **A-2** in IS : 11007-1984*.

A-2. ALKALINE HYDROLYSIS METHOD

A-2.1 Principle — The procedure is based on the alkaline hydrolysis of methabenzthiazuron to form volatile methylamine which is collected and determined quantitatively by titrating with standard acid.

A-2.2 Apparatus — An assembly of the apparatus is illustrated in Fig. 1. Minor modifications in the illustrative assembly with regard to joints might be made. However, it should be ensured that all joints are leak-proof.

A-2.3 Reagents

A-2.3.1 *Potassium Hydroxide Solution* — 1·0 N solution in diethylene glycol and distilled water in ratio 1 : 1. Dissolve 66 g of potassium hydroxide in 500 ml of distilled water and make up to one litre with diethylene glycol.

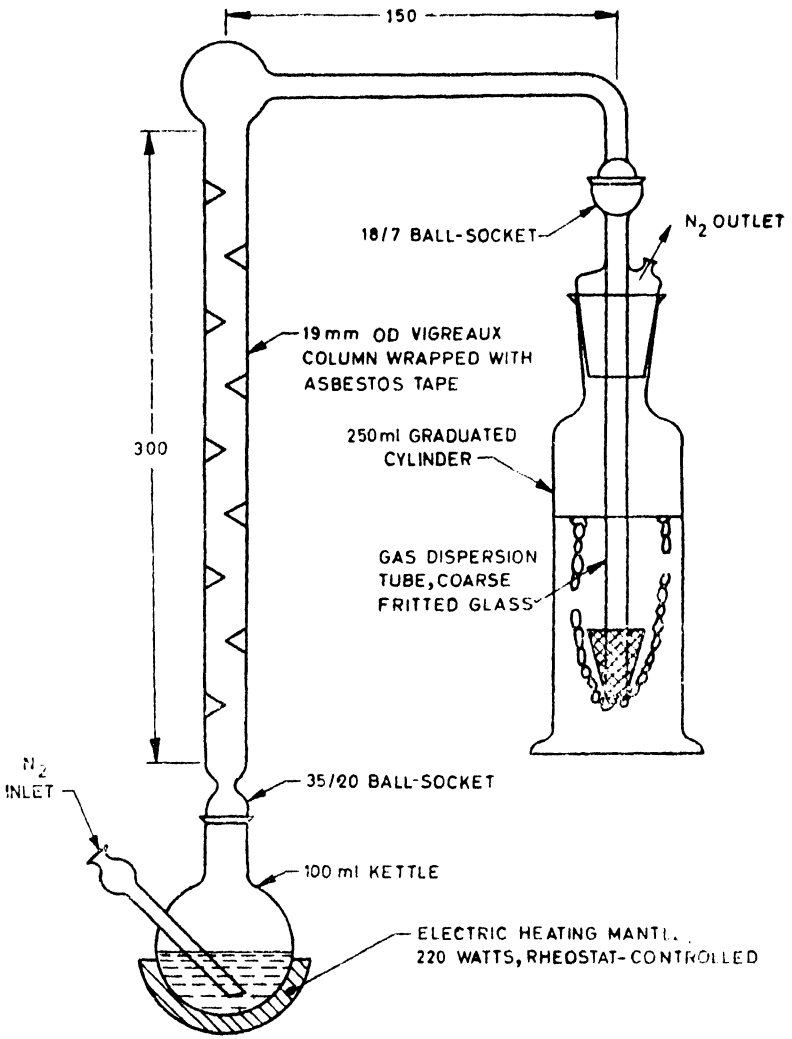
A-2.3.2 *Boric Acid Solution* — Dissolve 20 g of boric acid in distilled water and dilute to one litre. Heat at 70°C, swirl and cool to room temperature. Add 10 ml of 0·1 percent bromocresol green indicator and neutralize to a green end point with 0·1 N hydrochloric acid.

A-2.3.3 *Standard Hydrochloric Acid Solution* — 0·1 N, standardized with sodium carbonate previously dried at 260 to 270°C for 30 minutes.

A-2.4 Procedure

A-2.4.1 Introduce, into the kettle, a quantity of sample equivalent to about 0·4 g of methabenzthiazuron, accurately weighed. By means of graduated cylinder, add 50 ml of the potassium hydroxide solution to the kettle and add a few glass beads to ensure smooth ebullition. Apply silicone grease to the joint and connect the kettle and condenser using a clamp. Before start of boiling ensure that the joints are secured against leakages. Check for leakages during the experiment with *p*H paper. Methylamine is alkaline in nature and as such its leakage can be easily detected with *p*H paper 7 to 8·5 range. By means of a graduated cylinder add to the receiver 150 ml of the boric acid solution. Clamp the nitrogen inlet tube securely to the glass inlet tube on the flask and start the nitrogen flow so as to get slow and uniform bubbing in the receiver containing boric acid. Apply sufficient heat to the kettle so

*Specification for methabenzthiazuron, technical.



All dimensions in millimetres.

FIG. 1 APPARATUS FOR DETERMINATION OF METHABENZTHIAZURON CONTENT (ALKALINE HYDROLYSIS METHOD)

that the contents start boiling. Continue boiling for 90 minues. Stop heating while continuing to pass nitrogen for next 5 minutes.

NOTE — Heating of the kettle should be controlled so that proper refluxing is effected. Carry over of condensate to the receiver, which may result from vigorous distillation may give higher results to the extent of about one percent. So precaution should always be taken to avoid such carry over. Low heating rate results in low results for methabenzthiazuron and further heating than 90 minutes does not help.

Disconnect the receiver first and then nitrogen supply. Transfer the contents of the receiver into a 500-ml Erlenemyer flask. Rinse the inside and outside of the gas delivery tube and the inside of the receiver with boric acid solution adding the washings to the Erlenmeyer flask.

Titrate the contents of the Erlenmeyer flask with the standard hydrochloric acid solution to the original green colour of the boric acid solution. The end point is best determined by comparing the colour to that of a blank solution of boric acid and bromocresol green.

A-2.5 Calculation

$$\text{Methabenzthiazuron content, percent by mass} = \frac{22{\cdot}10 \times V \times N}{M}$$

where

V = volume in ml of standard hydrochloric acid solution used,

N = normally of standard hydrochloric acid solution, and

M = mass in g of sample taken for test.

(*Continued from page* 2)

Members	*Representing*
SHRI N. S. VENKATARAMAN	Department of Agriculture, Government of Tamil Nadu, Madras
DR R. V. VENKATARATNAM DR NAGABHUSHAN RAO (*Alternate*)	Regional Research Laboratory (CSIR), Hyderabad
DR SANTOSH YELLORE DR D. B. ANANTHA NARAYANA (*Alternate*)	Analytical Testing Services Pvt Ltd, New Delhi
SHRI T. PURNANANDAM, Director (Agri & Food)	Director General, ISI (*Ex-officio Member*)

Secretary

SHRI LAJINDER SINGH
Deputy Director (Agri & Food), ISI

INDIAN STANDARDS INSTITUTION

Headquarters

Manak Bhavan 9 Bahadur Shah Zafar Marg NEW DELHI 110002
Telephones 26 60 21 27 01 31 Telegrams: Manaksanstha
(Common to all Offices)

Regional Offices		*Telephone*
*Western	Manakalaya E9 MIDC Marol Andheri (East) BOMBAY 400093	6 32 92 95
†Eastern	1 14 C I T Scheme VII M V I P Road Maniktola CALCUTTA 700054	36 24 99
Southern	C I T Campus MADRAS 600113	41 24 42
Northern	B69 Phase VII Industrial Area Mohali S A S Nagar 160 055 (Punjab)	8 33 28

Branch Offices

Pushpak Nungambakkam High Road AHMEDABAD 380001	2 63 48 2 63 49
Peico House Unity Building Ramanthapura BANGALORE 560002	22 48 05
Gangotri Complex Bhadbhada Road T T Nagar BHOPAL 462 003	6 27 16
22E Kalpana Area BHUBANESHWAR 751 014	5 36 27
5 8 56C L N Gupta Marg HYDERABAD 500001	2 10 83
R14 Yudhister Marg C Scheme JAIPUR 302005	6 58 37
117/418 B Sarvodaya Nagar KANPUR 208005	4 72 92
Patliputra Industrial Estate PATNA 800 013	6 23 05
Hantex Bldg (2nd Floor) Rly Station Road TRIVANDRUM 695001	62 27

Inspection Offices (With Sale Point)

Institution of Engineers (India) Building 1332 Shivaji Nagar PUNE 411005	5 24 35

* Sales Office in Bombay is at Novelty Chambers, Grant Road 89 65 28
Bombay 400007

† Sales Office in Calcutta is at 5 Chowringhee Approach P O 27 68 00
Princep Street Calcutta 700072

Printed at Printograph New Delhi, India